

WHAT IS CLAIMED IS:

1. An Automatic Gain Control system comprising:

an radio-frequency amplifier;

5 a local oscillator;

a mixing unit that combines the output signal from said radio
-frequency amplifier and the output signal from said local oscillator and
generates an intermediate-frequency signal;

10 a bandpass filter that limits the bandwidth of said
intermediate-frequency signal;

an intermediate-frequency amplifier that amplifies the output signal
from said bandpass filter;

a power detector that detects the power of the output signal from
said radio-frequency amplifier;

15 a filtering unit that filters the output signal from said power
detector;

an adder that adds the output signal from said filtering unit and the
output signal from said intermediate-frequency amplifier;

20 an A/D converter that converts the output signal from said adder
from analog to digital; and

a controller that adjusts the gain of said radio-frequency amplifier
and the gain of said intermediate-frequency amplifier based on the
output signal from said A/D converter.

25 2. An Automatic Gain Control system comprising:

an radio-frequency amplifier;

a local oscillator;

a mixing unit that combines the output signal from said radio-frequency amplifier and the output signal from said local oscillator and generates an intermediate-frequency signal;

5 a bandpass filter that limits the bandwidth of said intermediate-frequency signal;

an intermediate-frequency amplifier that amplifies the output signal from said bandpass filter;

a first A/D converter that converts the output signal from said bandpass filter from analog to digital;

10 a power detector that detects the power of the output signal from said radio-frequency amplifier;

a filtering unit that filters the output signal from said power detector;

15 a second A/D converter that converts the output signal from said filtering unit from analog to digital; and

a controller to which both the output signal from said first A/D converter and the output signal from said second A/D converter are input; and wherein

20 said controller adjusts the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier based on the output signal from said first A/D converter and the output signal from said second A/D converter.

3. The Automatic Gain Control system according to claim 1, wherein

25 said controller calculates both the power of the radio-frequency signal that is input to said radio-frequency amplifier and the power of the intermediate-frequency signal that is input to said

intermediate-frequency amplifier, whose bandwidth is limited, based on the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier, and adjusts the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier based on the calculated powers.

4. The Automatic Gain Control system according to claim 2, wherein

said controller calculates both the power of the radio-frequency signal that is input to said radio-frequency amplifier and the power of the intermediate-frequency signal that is input to said intermediate-frequency amplifier, whose bandwidth is limited, based on the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier, and adjusts the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier based on the calculated powers.

5. The Automatic Gain Control system according to claim 1, wherein

said controller calculates an error rate for the data outputted from the A/D converter, and adjusts the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier based on the calculated error rate.

6. The Automatic Gain Control system according to claim 2, wherein

said controller calculates an error rate for the data outputted from the second A/D converter, and adjusts the gain of said radio-frequency amplifier and the gain of said intermediate-frequency amplifier based on the calculated error rate.